CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 (currently amended) A method for synchronizing a mobile radio receiver with a frame structure of a radio signal received from one specific base station of a plurality of base stations, the method comprises the steps of:

transmitting, from each of the base stations, a predefined sequence for each frame, the predefined sequence having N frame synchronization codes selected from a set of synchronization codes, and in each case two predefined sequences transmitted by different ones of the base stations differ from one another in terms of at least one frame synchronization code;

detecting and decoding the frame synchronization codes, transmitted by the specific base station, in the mobile radio receiver, the synchronization codes of the set of synchronization codes being known in the mobile radio receiver, resulting in detected and decoded frame synchronization codes;

allocating a code parameter, to each of the detected and decoded frame synchronization codes, the code parameter characterizing each of the detected and decoded frame synchronization codes;

identifying the predefined sequence transmitted by the specific base station on a basis of N consecutively received code parameters, resulting in an identified sequence; and

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synchronizing the mobile radio receiver with the frame structure of the radio signal received from the specific base station ~~using the identified sequence containing the frame synchronization codes; and~~ by aligning a timing of the frame structure used in the mobile radio receiver with a characteristic time ~~start time and an end time~~ of the identified sequence.

2 (original). The method according to claim 1, which comprises:

forming sets of the frame synchronization codes contained in the predefined sequences to differ in pairs;

using a function which is invariant compared with a cyclical shift of detected frame synchronization codes for identifying the predefined sequence transmitted by the specific base station; and

applying the function to the N consecutively received code parameters and a derived function value identifies the predefined sequence transmitted by the specific base station.

3 (original). The method according to claim 2, which comprises setting the function such that

$$F(c1,..,cN)=\sum_{n=1}^{N}(K(cn))^{p}$$

where p is a natural number where p > 0, and K(cl), .., K(cN) are the code parameters determined.

4 (original). The method according to claim 1, wherein the synchronizing step comprises the steps of:

defining at least one reference frame synchronization code of the identified sequence with a known temporal spacing from a frame start; and

synchronizing the mobile radio receiver with the reference frame synchronization code.

5 (original). The method according to claim 1, which comprises using orthogonal gold codes as the frame synchronization codes.

6 (original). The method according to claim 3, which comprises setting p > 1.

7 (currently amended). In combination with a mobile radio receiver, a device for synchronizing the mobile radio receiver with a frame structure of a radio signal received from one specific base station of a plurality of base stations, each of the base stations transmits a predefined sequence for each frame and the predefined sequence contains N frame synchronization codes selected from a set of synchronization codes, the device comprising:

a detector;

a decoder, said detector and said decoder used for detecting and decoding the frame synchronization codes transmitted by the specific base station in the mobile radio receiver, the

synchronization codes of the set of synchronization codes being known in the mobile radio receiver;

a computing unit for performing calculations on the frame synchronization codes;

a frame timing alignment device for synchronizing the mobile radio receiver using the predefined sequence of the frame synchronization codes, in each case two predefined sequences transmitted by different ones of the base stations differ from another in terms of at least one frame synchronization code; and

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an allocation logic allocates a code parameter, characteristic of the frame synchronization code, to each detected and decoded frame synchronization code resulting in N consecutively received code parameters;

said computing unit identifies the predefined sequence transmitted by the specific base station on a basis of a calculation performed on the N consecutively received code parameters, resulting in an identified sequence;

said frame timing alignment device synchronizes the mobile radio receiver using the identified sequence of the frame

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synchronization codes with the frame structure of the radio signal received from the specific base station by aligning a timing of the frame structure used in the mobile radio receiver with a characteristic time ~~start time and an end time~~ of the identified sequence.